

Abstract

1 A high resolution sheet metal scanner employs machine vision to check a sheet metal part
2 or the like for accuracy of punched or drilled holes or other structure. A high-resolution line-
3 scanning camera mounted to an X-Y table, located in an environmentally sealed lower assembly.
4 The sheet metal part is placed upon a transparent support plate atop of the lower assembly. The
5 line-scan camera is precision focused on the top surface of the glass support plate. A fixed light
6 source, i.e., illuminator, is situated above the glass plate, and supplies a uniform bright light to
7 the entire viewing field. The camera is transported in the X and Y directions on a carriage of the
8 X-Y table. Damping devices can be incorporated into legs of the unit to accommodate for shocks
9 and vibrations. A computer control may be used for controlling the camera and the X-Y table.
10 Software in the computer constructs the two-dimensional image of the part from line scans, and
11 may import an existing CAD drawing file for comparison.